

## TWO CASES OF GASTROSTOMY FOR CICATRICIAL STENOSIS OF THE ŒSOPHAGUS.

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TWO cases of cicatricial stenosis of the œsophagus, due to the ingestion of concentrated lye, have come under my care within the past eighteen months, in both of which gastrostomy was performed in order to avert impending starvation.

CASE I.—B. M., colored, aged three years, was admitted to the Maryland University Hospital on September 8, 1893. One month previously he drank some concentrated lye, which caused great inflammation and ulceration of the pharynx and œsophagus, followed by cicatricial contraction of the œsophagus. Marked laryngitis was also set up, as was shown by barking cough and hoarse voice, as well as by a laryngoscopic examination. Upon admission deglutition was difficult, and was limited to the swallowing of very small quantities of liquids. Numerous attempts were made to pass bougies through the stricture while the patient was under the influence of chloroform, but with very poor success. He became extremely emaciated, his temperature was reduced to 95° F., and upon one occasion fell to 90° F., and his pulse became rapid, irregular, and thread-like. As he was starving from inability to swallow sufficient nourishment, I determined to perform gastrostomy and feed him through the gastric fistula. Owing to his extreme prostration it was feared that he would die under the anæsthetic, but thanks to the skilful administration of chloroform by Dr. Spruill, he bore the operation very well. The operation was performed on November 27, 1893, according to Frank's method. In this operation an incision two and a half inches in length is first made, parallel to the left costal arch and a short distance from it (Fenger's incision), passing through the whole thickness of

the abdominal wall. The stomach is now seized with toothed forceps and a cone-shaped portion of its anterior wall raised and brought out through the incision, and the base of the cone sutured to the peritoneal margin of the wound, thus shutting off the peritoneal cavity. A second incision is made through the skin above the costal arch parallel with and about an inch from the first, and the intervening bridge of skin undermined. The cone-shaped portion of the stomach is now drawn under this bridge of skin and its apex attached to the margins of the wound over the ribs. The deep portions of the first wound are now sutured up to the stomach, and the skin is brought entirely over the stomach and sutured. Forty-eight hours later the apex of the cone was incised and its edges united to the skin by a number of sutures. He was at once fed through the fistula by means of a tube and funnel, and continued to take his nourishment by this channel for the remainder of his life, which was more than a year. The object of Frank's method of performing gastrostomy is to establish an oblique canal, which will act like a valve and prevent leakage. This aim was admirably accomplished in this case, as there was no escape of the gastric contents even when the viscus was distended and the patient made to cough violently. The mucous membrane of the stomach came up to the skin nicely, looking like a little mouth, and there was no excoriation or irritation of the integuments, which is so common when the gastric juice flows over the skin. The boy was fed with milk, raw eggs, cod-liver oil, and whiskey through the fistula, and was allowed to have milk by the mouth; but it was evident that he swallowed but little of it. He could have lived only a few days if gastrostomy had not been done, but he improved rapidly after its performance, and was soon up and around and gained strength and flesh. He passed from under my care on January 1, 1894, and I did not again take charge of him until July. He had improved enormously, except in regard to deglutition, and while he insisted upon having milk to drink and appeared to swallow it, in a short time he would spit it out. The fistula had served its purpose so well that I was disinclined to make further efforts to dilate the œsophageal stricture, which was situated about opposite the cricoid cartilage, and had proven entirely impervious from above; but I realized that he would not receive any proper care when he returned to his home, and so determined to attempt to pass bougies from below. I dilated the fistulous opening and made several efforts to pass bougies through the cardiac orifice of the stomach, but found that it also was strictured to

such an extent as to prevent the passage of any instrument, though it was not difficult to engage the sound in the orifice. Finding that I could neither pass an instrument from the mouth nor the stomach, I performed an external œsophagotomy on the left side on November 19, 1894. No difficulty was experienced in exposing the œsophagus by an incision along the anterior margin of the left sterno-cleido-mastoid muscle, but as the omohyoid muscle crossed the line of incision and was in the way, it was divided. The œsophagus was opened and a small gum bougie introduced and passed through the stricture and brought out at the fistula. To the end of this I tied a silk cord and drew it backward so that one end protruded from the wound in the neck and the other from the fistulous opening. By means of this thread I sawed the stricture, as recommended by Abbe, and was able to pass larger sounds. Some days later I succeeded in passing an Otis dilating urethrotome, and forcibly stretched the œsophagus, after which large œsophageal bougies could be passed from the opening in the neck into the stomach. The upper part of the gullet was still closed, and nothing could be made to pass. There was no opening from the pharynx into the œsophagus. I made an opening by passing steel sounds from the wound in the neck, and was then able to pass bougies from the mouth to the stomach. The œsophagotomy wound healed rapidly, but the frequent passage of sounds and the many and severe operative procedures exhausted his strength, and he died about one month after the performance of the external œsophagotomy, when success seemed almost assured. Could he have lived a little while longer, it is probable that a cure would have been effected. He survived the gastrostomy over a year, and was nourished during that time entirely by the artificial route.

CASE II.—J. W. W., colored, aged one year and nine months, was brought to University Hospital on July 11, 1894. He had been healthy until six weeks before admission, when he swallowed some concentrated lye, the exact quantity not being known. He was able to swallow a little milk until eight days before coming to the hospital, when fluids returned through his nose and deglutition became impossible. He was a wretched-looking child, emaciated almost to a skeleton, and constantly uttering a plaintive cry. On July 13 I performed gastrostomy in the same manner as in Case I. As he had had no nourishment for ten days, his stomach was opened at once and milk introduced. This was a mistake, as some of the milk got on the wound and infection followed, with the formation of a superficial

abscess. His temperature ran up to  $104^{\circ}$  F. as the result of this abscess, and fell at once on the removal of a few stitches and the evacuation of some pus. The wound closed satisfactorily, and the boy was nourished for four months through the fistula. This patient was extremely fretful, and in consequence of his crying some eversion of the mucous membrane of the stomach occurred; nevertheless the fistula was well adapted to the purpose for which it was intended, though it did not retain the contents of the stomach quite as well as in the first case. He was fed with milk every two or three hours, eggs, cod-liver oil, soups, and whiskey, and soon improved greatly in appearance and strength. As was the case with the other boy, he also wanted something to put in his mouth, and was not satisfied with gastric feeding. In November I was able to pass a small bougie from the mouth into the stomach, and to cause it to protrude through the fistula. To this I tied a stout silk ligature and withdrew the instrument, leaving the cord protruding from the mouth and stomach. I sawed the stricture with this, and was at once able to pass larger bougies, until finally a No. 21 blunt-pointed cesophageal sound could be passed. No bad result followed this manipulation, and a few days later I again passed a No. 16 bougie, but on attempting to pass a No. 18, it passed down through the cardiac orifice of the stomach, but was felt to be behind the mucous membrane. The instrument was withdrawn, and beyond a transient rise of temperature to  $102^{\circ}$  F. on the next day, no ill effects were experienced. A week later bougies were passed up to No. 22, and the fistula was denuded and sutured, and in a short time it had healed. From this time he has taken all his food *per vias naturales*, and has grown fat, strong, and happy. Sounds have been passed occasionally, and he was sent home in the latter part of January with instructions to have the sound passed at least every two weeks.

Comment on these cases is superfluous. They were both starving from inability to swallow nutriment, and were rescued from impending death by the performance of gastrostomy.